In the Claims

Please amend the claims as follows:

1.   (Previously Presented)   A computer-implemented system for multi-party constrained optimization, the system comprising one or more processing units and one or more memory units collectively operable to:

access a first optimization problem and a first threshold value corresponding to a first party to a negotiation, the first optimization problem comprising at least one first objective to which the first threshold value relates and one or more first constraints to which the at least one first objective relates;

access a second optimization problem and a second threshold value corresponding to a second party to the negotiation, the second optimization problem comprising at least one second objective to which the second threshold value relates and one or more second constraints to which the at least one second objective relates;

generate a global solution to a global optimization problem, the global solution comprising a first objective value for the at least one first objective and a second objective value for the at least one second objective such that the first and second objective values are consistent with value the one or more first constraints, the first threshold value, the one or more second constraints, and the second threshold value, the global solution representing a first excess between the first objective value and the first threshold value and a second excess between the second objective value and the second threshold value, the global solution being generated considering a fairness criterion specifying one of the following:

that the first excess must equal the second excess, the fairness criterion comprising an equal distribution criterion;

that a ratio of the first excess to the second excess must equal a ratio of the first threshold value to the second threshold value, the fairness criterion comprising a geometric distribution criterion;

that a ratio of the first excess to the second excess must equal a ratio of a first weight for the first party to a second weight for the second party, the fairness criterion comprising a weighted distribution criterion; and

that a ratio of the first objective value to the first threshold value must equal a first weight for the first party and a ratio of the second objective value to the second threshold

value must equal a second weight for the second party, the fairness criterion comprising a weighted geometric distribution criterion.

2.   (Previously Presented) The system of Claim 1, wherein the first optimization problem is received from the first party and comprises at least a portion of a constrained optimization problem (COP) for the first party, the COP comprising at least the first objective.

3.   (Previously Presented) The system of Claim 2, wherein the COP further comprises at least one constraint relating to one or more global variables.

4.   (Canceled)

5.   (Previously Presented)   The system of Claim 1, wherein the global optimization problem comprises a linear programming (LP) problem.

6.   (Previously Presented) The system of Claim 1, wherein the first objective value exceeds the first threshold value and the second objective value exceeds the second threshold value.

7.   (Previously Presented) The system of Claim 1, further operable to generate the global solution as a Pareto-optimal solution.

8.   (Canceled)

9.   (Canceled)

10.   (Previously Presented) The system of Claim 1, further operable to access an additional first threshold value for the first party, access an additional second threshold value for the second party, and generate an additional global solution satisfying the additional first threshold value and the additional second threshold value.

11.   (Previously Presented) The system of Claim 1, further operable to:

communicate one or more global solutions to the first party and the second party;

receive filtering information from the first party and the second party;

use the filtering information to determine one or more filtered global solutions from among the global solutions according to a filtering approach.

12.   (Previously Presented) The system of Claim 11, wherein the filtering approach is selected from the group consisting of:

a veto approach;

a Pareto-optimal ranking approach;

an optimal weighted preferences approach; and

a mixed approach combining two or more of the above.

13.   (Previously Presented) The system of Claim 1, further operable to:

communicate one or more global solutions to the first party and the second party;

receive selection information from the first party and the second party; and

use the selection information to determine a selected global solution from among the communicated global solutions according to a selection approach.

14.   (Previously Presented) The system of Claim 13, wherein the selection approach is selected from the group consisting of:

an auction approach; and

a random selection approach.

15.   (Previously Presented) The system of Claim 1, further operable to mediate at least a portion of a negotiation between the first party and a third party substantially simultaneously with the negotiation between the first party and the second party.

16.   (Canceled)

17. (Previously Presented) A computer-implemented method for multi-party constrained optimization, the method performed using a computer system comprising one or more processing units and one or more memory units, the method comprising:

using the computer system, accessing a first optimization problem and a first threshold value corresponding to a first party to a negotiation, the first optimization problem comprising at least one first objective to which the first threshold value relates and one or more first constraints to which the at least one first objective relates;

using the computer system, accessing a second optimization problem and a second threshold value corresponding to a second party to the negotiation, the second optimization problem comprising at least one second objective to which the second threshold value relates and one or more second constraints to which the at least one second objective relates; and

using the computer system, generating a global solution to a global optimization problem, the global solution comprising a first objective value for the at least one first objective and a second objective value for the at least one second objective such that the first and second objective values are consistent with the one or more first constraints, the first threshold value, the one or more second constraints, and the second threshold value, the global solution comprising an option for resolving the computer-implemented multi-party negotiation, the global solution representing a first excess between the first objective value and the first threshold value and a second excess between the second objective value and the second threshold value, the global solution being generated considering a fairness criterion specifying one of the following:

that the first excess must equal the second excess, the fairness criterion comprising an equal distribution criterion;

that a ratio of the first excess to the second excess must equal a ratio of the first threshold value to the second threshold value, the fairness criterion comprising a geometric distribution criterion;

that a ratio of the first excess to the second excess must equal a ratio of a first weight for the first party to a second weight for the second party, the fairness criterion comprising a weighted distribution criterion; and

that a ratio of the first objective value to the first threshold value must equal a first weight for the first party and a ratio of the second objective value to the second threshold

value must equal a second weight for the second party, the fairness criterion comprising a weighted geometric distribution criterion.

18.   (Original)   The method of Claim 17, further comprising receiving the first optimization problem from the first party, the first optimization problem comprising at least a portion of a constrained optimization problem (COP) for the first party, the COP comprising at least the first objective.

19.   (Original)   The method of Claim 18, wherein the COP further comprises at least one constraint relating to one or more global variables.

20.   (Canceled)

21.   (Previously Presented)   The method of Claim 17, wherein the global optimization problem comprises a linear programming (LP) problem.

22.   (Previously Presented) The method of Claim 17, wherein the first objective value exceeds the first threshold value and the second objective value exceeds the second threshold value.

23.   (Previously Presented) The method of Claim 17, wherein the global solution is generated as a Pareto-optimal solution.

24.   (Canceled)

25.   (Canceled)

26.   (Previously Presented) The method of Claim 17, further comprising:
accessing an additional first threshold value for the first party;
accessing an additional second threshold value for the second party; and
generating an additional global solution satisfying the additional first threshold value and the additional second threshold value.

27. (Previously Presented) The method of Claim 17, further comprising:

communicating one or more global solutions to the first party and the second party;

receiving filtering information from the first party and the second party;

using the filtering information to determine one or more filtered global solutions from among the global solutions according to a filtering approach.

28. (Original) The method of Claim 27, wherein the filtering approach is selected from the group consisting of:

a veto approach;

a Pareto-optimal ranking approach;

an optimal weighted preferences approach; and

a mixed approach combining two or more of the above.

29. (Previously Presented) The method of Claim 17, further comprising:

communicating one or more global solutions to the first party and the second party;

receiving selection information from the first party and the second party;

use the selection information to determine a selected global solution from among the communicated global solutions according to a selection approach.

30. (Original) The method of Claim 29, wherein the selection approach is selected from the group consisting of:

an auction approach; and

a random selection approach.

31. (Original) The method of Claim 17, further comprising mediating at least a portion of a negotiation between the first party and a third party substantially simultaneously with the negotiation between the first party and the second party.

32. (Canceled)

33.   (Previously Presented) Software for multi-party constrained optimization, the software embodied in a computer-readable medium and operable to, when executed using a computer system comprising one or more processing units and one or more memory units:

access a first optimization problem and a first threshold value corresponding to a first party to a negotiation, the first optimization problem comprising at least one first objective to which the first threshold value relates and one or more first constraints to which the at least one first objective relates;

access a second optimization problem and a second threshold value corresponding to a second party to the negotiation, the second optimization problem comprising at least one second objective to which the second threshold value relates and one or more second constraints to which the at least one second objective relates;

generate a global solution to a global optimization problem, the global solution comprising a first objective value for the at least one first objective and a second objective value for the at least one second objective such that the first and second objective values are consistent with the one or more first constraints, the first threshold value, the one or more second constraints, and the second threshold value, the global solution comprising an option for resolving the computer-implemented multi-party negotiation, the global solution representing a first excess between the first objective value and the first threshold value and a second excess between the second objective value and the second threshold value, the global solution being generated considering a fairness criterion specifying one of the following:

that the first excess must equal the second excess, the fairness criterion comprising an equal distribution criterion;

that a ratio of the first excess to the second excess must equal a ratio of the first threshold value to the second threshold value, the fairness criterion comprising a geometric distribution criterion;

that a ratio of the first excess to the second excess must equal a ratio of a first weight for the first party to a second weight for the second party, the fairness criterion comprising a weighted distribution criterion; and

that a ratio of the first objective value to the first threshold value must equal a first weight for the first party and a ratio of the second objective value to the second threshold value must equal a second weight for the second party, the fairness criterion comprising a weighted geometric distribution criterion.

34.   (Original) The software of Claim 33, wherein the first optimization problem is received from the first party and comprises at least a portion of a constrained optimization problem (COP) for the first party, the COP comprising at least the first objective.

35.   (Original) The software of Claim 34, wherein the COP further comprises at least one constraint relating to one or more global variables.

36.   (Canceled)

37.   (Previously Presented) The software of Claim 33, wherein the global optimization problem comprises a linear programming (LP) problem.

38.   (Previously Presented) The software of Claim 33, wherein the first objective value exceeds the first threshold value, and the second objective value exceeds the second threshold value.

39.   (Original) The software of Claim 33, further operable to generate the global solution as a Pareto-optimal solution.

40.   (Canceled)

41.   (Canceled)

42.   (Previously Presented) The software of Claim 33, further operable to access an additional first threshold value from the first party, access an additional second threshold value from the second party, and generate an additional global solution satisfying the additional first threshold value and the additional second threshold value.

43.   (Previously Presented) The software of Claim 33, further operable to:

communicate one or more global solutions to the first party and the second party;

receive filtering information from the first party and the second party;

use the filtering information to determine one or more filtered global solutions from among the global solutions according to a filtering approach.

44.   (Original)   The software of Claim 43, wherein the filtering approach is selected from the group consisting of:

a veto approach;

a Pareto-optimal ranking approach;

an optimal weighted preferences approach; and

a mixed approach combining two or more of the above.

45.   (Previously Presented) The software of Claim 33, further operable to:

communicate one or more global solutions to the first party and the second party;

receive selection information from the first party and the second party;

use the selection information to determine a selected global solution from among the communicated global solutions according to a selection approach.

46.   (Original)   The software of Claim 45, wherein the selection approach is selected from the group consisting of:

an auction approach; and

a random selection approach.

47.   (Original)   The software of Claim 33, further operable to mediate at least a portion of a negotiation between the first party and a third party substantially simultaneously with the negotiation between the first party and the second party.

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48.　(Previously Presented)　The system of Claim 13, wherein the one or more communicated global solutions comprise a filtered global solution determined from among one or more global solutions according to a filtering approach using filtering information received from the first and second parties.

49.　(Previously Presented)　The method of Claim 29, wherein the one or more communicated global solutions comprise a filtered global solution determined from among one or more global solutions according to a filtering approach using filtering information received from the first and second parties.

50.　(Previously Presented)　The software of Claim 45, wherein the one or more communicated global solutions comprise a filtered global solution determined from among one or more global solutions according to a filtering approach using filtering information received from the first and second parties.

51.   (Withdrawn) A computer-implemented method for multi-party constrained optimization, the method performed using a computer system comprising one or more processing units and one or more memory units, the method comprising:

using the computer system, accessing a first optimization problem corresponding to a first party to a negotiation, the first optimization problem comprising at least one first objective and one or more first constraints-to which the first objective relates;

using the computer system, accessing a second optimization problem corresponding to a second party to the negotiation, the second optimization problem comprising at least one second objective and one or more second constraints to which the second objective relates;

using the computer system, determining a first optimal value for the at least one first objective considering the one or more first constraints for the first optimization problem;

using the computer system, determining a second optimal value for the at least one second objective considering the one or more second constraints for the second optimization problem; and

using the computer system, generating a global solution to a global optimization problem such that the global solution is consistent with the at least one first objective, the one or more first constraints, the at least one second objective, and the one or more second constraints, the global solution comprising an option for resolving the computer-implemented multi-party negotiation, the global solution representing a first excess between the global solution and the first optimal value and a second excess between the global solution and the second optimal value, the global solution being generated considering a fairness criterion specifying that the first excess is to minimally deviate from the first optimal value and that the second excess is to minimally deviate from the second optimal value considering the one or more first constraints and the one or more second constraints.

52.   (Withdrawn) The method of Claim 51, further comprising receiving the first optimization problem from the first party, the first optimization problem comprising at least a portion of a constrained optimization problem (COP) for the first party, the COP comprising at least the first objective.

53.   (Withdrawn) The method of Claim 52, wherein the COP further comprises at least one constraint relating to one or more global variables.

54.   (Withdrawn)   The method of Claim 51, wherein the global optimization problem comprises a linear programming (LP) problem.

55.   (Withdrawn) The method of Claim 51, further comprising:

accessing one or more first threshold values for the first party;

accessing one or more second threshold values for the second party; and

generating the global solution consistent with the one or more first threshold values and the one or more second threshold values.

56.   (Withdrawn)   The method of Claim 55, wherein the first objective value exceeds the one or more first threshold values accessed for the first party and the second objective value exceeds the one or more second threshold values accessed for the second party.

57.   (Withdrawn)   The method of Claim 51, wherein the global solution is generated as a Pareto-optimal solution.

58.   (Withdrawn) The method of Claim 51, further comprising:

communicating one or more global solutions to the first party and the second party;

receiving filtering information from the first party and the second party;

using the filtering information to determine one or more filtered global solutions from among the global solutions according to a filtering approach.

59.   (Withdrawn)   The method of Claim 58, wherein the filtering approach is selected from the group consisting of:

a veto approach;

a Pareto-optimal ranking approach;

an optimal weighted preferences approach; and

- a mixed approach combining two or more of the above.

60.   (Withdrawn) The method of Claim 51, further comprising:

communicating one or more global solutions to the first party and the second party;

receiving selection information from the first party and the second party;

use the selection information to determine a selected global solution from among the communicated global solutions according to a selection approach.

61.   (Withdrawn) The method of Claim 60, wherein the selection approach is selected from the group consisting of:

an auction approach; and

a random selection approach.

62.   (Withdrawn)   The method of Claim 60, wherein the one or more communicated global solutions comprise a filtered global solution determined from among one or more global solutions according to a filtering approach using filtering information received from the first and second parties.

63.   (Withdrawn) The method of Claim 51, further comprising mediating at least a portion of a negotiation between the first party and a third party substantially simultaneously with the negotiation between the first party and the second party.

Conclusion

Applicant respectfully requests full allowance of all pending claims.

If the Examiner believes a telephone conference would advance prosecution of this Application in any way, the Examiner is invited to contact Christopher W. Kennerly, Attorney for Applicant, at the Examiner's convenience at (214) 953-6812.

Applicant believes no fees are due. However, the Commissioner is hereby authorized to charge any fees or credit any overpayments to Deposit Account No. 02-0384 of Baker Botts L.L.P.

Respectfully submitted,

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